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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,042	11/15/2005	Takuji Yoshimoto	0171-1205PUS1	2382

2292 7590 04/29/2008
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EXAMINER	
NELSON, MICHAEL E	
ART UNIT	PAPER NUMBER
1794	

NOTIFICATION DATE	DELIVERY MODE
04/29/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/534,042	YOSHIMOTO ET AL.	
	Examiner	Art Unit	
	MICHAEL E. NELSON	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *05 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/05/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 4-6 are objected to because of the following informalities:

2. Claims 4-6 all have more than one period. One before the structure, and one at the end, and in the case of claim 4, one in the middle before the second set of structures. Claims are required to have only one period at the end of the claim. Furthermore, the parenthesis around the substituent definitions should be removed. Use of parenthesis makes the limitations appear optional.

3. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 1 states “a charge-transporting substance composed of a charge-transporting monomer or a charge-transporting oligomer or polymer having a number-average molecular weight of 200 to 500,000." It is unclear whether the number average molecular weight limitation is intended for the polymer material only, or for the monomer and oligomer materials as well. Claim 2 similarly states "wherein said charge

transporting substance is a charge-transporting monomer having conjugated units or a charge transporting oligomer with a number average molecular weight of 200 to 5000 having conjugated units." Again, it is unclear whether the molecular weight limitation is intended for the monomer or both the oligomer and monomer. Monomers are, by definition, a defined structure, and therefore do not usually have a number average molecular weight, however, since the number average molecular weight is defined as the total weight divided by the number of molecules, a "number average" molecular weight for a defined structure would be identical to the "molecular weight" of the structure. Polymer materials are generally undefined structures, and number average molecular weights are commonly reported. Oligomers can be defined structures or undefined, depending on the method of synthesis.

Claim Rejections - 35 USC § 102

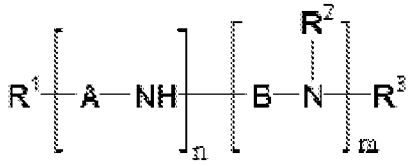
7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

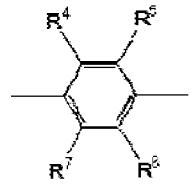
8. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Kosho et al. (JP 2002-151272).

9. Concerning claims 1-4, Kosho et al. describe an oligoaniline used as a carrier transport auxiliary layer between an anode and organic layer [0009] (charge transporting oligomer, per claim 2, with an aniline conjugated unit, per claim 3)

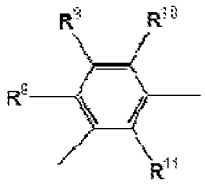
derivative having the general structure shown below, where R^1, R^2, and R^3 are hydrocarbon or organooxy groups, [0011], and also include hydrogen [0016]. A and B have the formula (2) or (3) shown below, where R^4-R^{11} are hydrogen, or monovalent hydrocarbon, hydroxyl, etc. [0013], and where m+n<=20 [0013]



(1)



(2)



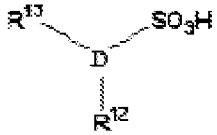
(3)

10. Kosho et al. disclose that the material is dissolved in a solvent, such as N-methyl pyrrolidone, N,N-dimethylacetamide, or N,N-dimethylformamide, which may be used as a mixture with other solvents, including specifically ethylene glycol, [0020], which is disclosed on page 17 of the specification as an example of a suitable solvent having a viscosity at 20°C between 10 to 200 mPa·s. Since the materials described are identical to the materials of Applicant's claim 4, and the material described in the specification, it is presumed to inherently meet the molecular weight requirements of Applicant's claims 1-2.

11. Concerning claim 5, the material described above meets the limitations of claim 5 where X and Y are aniline, and where q = 0.

12. Concerning claim 6, Kosho et al. discloses the use of a dopant with the oligoaniline derivative discussed above, having the structural formula (4) shown below,

where D is a benzene, naphthalene, anthracene, phenanthrene, and R^{12} and R^{13} are carboxyl or hydroxyl independently. [0019]



(4)

13. Concerning claims 7-9, Kosho et al. disclose the use of the material discussed above to form a to form a charge transporting thin film, (as illustrated in Tables 2-5, [0032]-[0037]), which is used as an auxiliary layer (hole injection layer) between an anode and hole transporting layer in an organic electroluminescent element (per claims 8-9 (as illustrated in Tables 2-5, [0032]-[0037])).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosho et al. (JP 2002-151272) as applied to claim 1 above, and further in view of Ito et al. (5,993,694).

16. Concerning claim 10, Kosho et al. describe the composition discussed above and it's use in the formation of a charge transporting film in an electroluminescent device. Kosho et al. are silent on the use of the composition for the formation of a solar cell.

17. It is commonly known in the art that organic charge transporting materials are used interchangeably in both electroluminescent devices and photovoltaic devices (solar cells), since the materials serve the same function (transporting charges). One example is described by Ito et al. who describes poly(aniline) materials suitable for both photovoltaic elements and electroluminescent elements (Column 1, lines 18-19).

18. Given this teaching, it would have been obvious to one of ordinary skill in the art to use the composition described by Kosho et al. as a charge transporting material in a solar cell, since the material would function in the same way in both devices, specifically as charge transport materials.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL E. NELSON whose telephone number is (571)270-3453. The examiner can normally be reached on M-F 7:30am-5:00pm EST (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael E. Nelson
Examiner
Art Unit 1794

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1794